What is claim d is:

1. Control apparatus for controlling one or more lamps or illuminating devices such as to achieve a natural flickering effect, whereas the control apparatus comprises:

a microprocessor circuit which is adapted to output an output signal for controlling or driving the one or more lamps or illumination devices, whereas the controlling signal is either completely non-periodic or has a period duration which is so long that the signal cannot be perceived by the human viewer as periodic.

2. The control apparatus of claim 1 which comprises:

a repeating loop which runs in the microprocessor circuit, whereas in said loop a register of said microprocessor assumes different values according to a predefined pattern, whereas if the register value assumes certain predefined values the illumination means is switched on for a time period corresponding to the respective register value.

3. The method of claim 2, whereas the register values for which a control such as to switch on the illumination means are selected such that an irregular impression is generated on the side of a viewer.

4. The control apparatus of claim 2, whereas the loop comprises:

a repeated incrementation of a register value from a basic value to a threshold value, whereas at predefined intermediate values of the register value a difference value between the register value and a further predefined value corresponding to the predefined intermediate register value is calculated,

whereas the difference value resulting from the subtraction then is used for controlling the time period for which the illumination means is switched on.

5. The control apparatus of claim 1, which further comprises:

a random number generator for generating a random number, whereas the random number thus generated is used for defining the time period for which the illumination means to be controlled is switched on, and whereas repeatedly random number values are generated which are then used again for controlling the time period for which the illumination means is switched on or switched off.

6. The control apparatus of claim 1, which further comprises:

a plurality of output terminals for controlling a plurality of illumination means.

7. The control apparatus of claim 6, further comprising:

a plurality of loops carried out by said microprocessor for controlling a plurality of illumination means independently from each other.

8. The control apparatus of claim 1, further comprising:

a selector unit for selecting the frequency of occurrence or the number of times within a certain period of time for which the one or more illumination devices are switched on and switched off.

9. The control apparatus of claim 1, further comprising one or more of the following elements:

a brightness sensor outputting a signal depending on which the control apparatus either drives and/or controls the illumination means or stops operation;
a switch for switching the control apparatus on and off;
a switch for selecting one or more of the illumination devices to be controlled.

10. An electronic illumination system comprising:

a control apparatus according to claim 1;

at least one illumination device controlled by said control apparatus, whereas said illumination means takes one of the following forms:

an electronic candle;
an electronic gravelight;
a light chain;
an electronic garland;
a table light;
an underwater light;
an electronic chimney fire;
an electronic open fire;
an electronic torch.